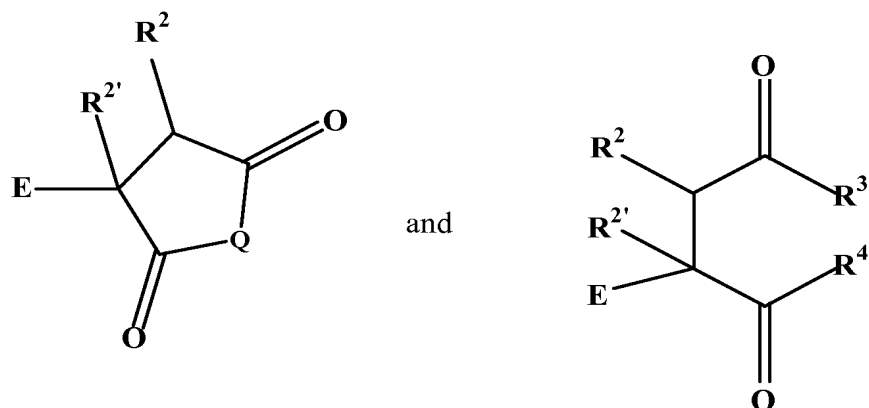


# IN THE CLAIMS:

1. (Currently amended) A curable elastomeric nanocomposite comprising clay and an elastomer comprising C<sub>2</sub> to C<sub>10</sub> olefin derived units, styrenic derived units in an amount of 1 to 15 wt% of the elastomer wherein some of the styrenic derived units are functionalized; wherein the elastomer also



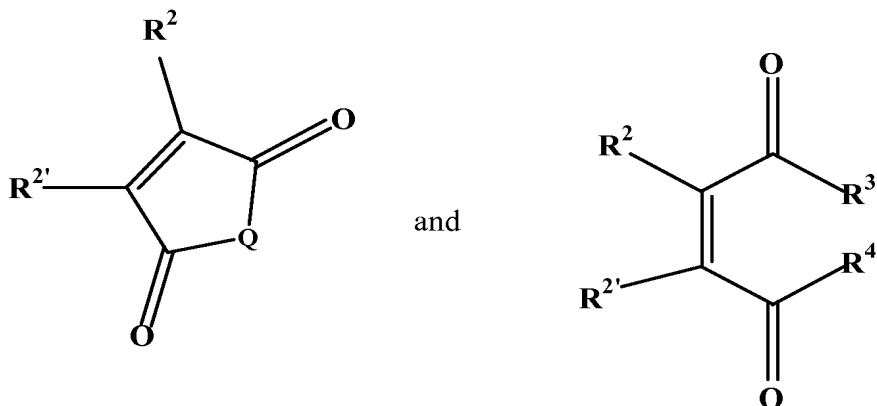
comprises functionalized monomer units having functional groups pendant to the elastomer, E, selected from the following:

wherein Q is selected from O and an NR<sup>1</sup> group, wherein R<sup>1</sup> is selected from hydrogen, C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls, substituted C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls; R<sup>2</sup> and R<sup>2'</sup> are the same or different and are selected from hydrogen, C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls, substituted C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls, hydroxyl and C<sub>1</sub> to C<sub>20</sub> alkoxys; and wherein R<sup>3</sup> and R<sup>4</sup> are the same or different and selected from -OR<sup>5</sup> and -NHR<sup>5</sup>, wherein R<sup>5</sup> is defined as R<sup>1</sup> above.

2. (Original) The nanocomposite of Claim 1, wherein the elastomer also comprises monomer units selected from styrenic derived units and substituted styrenic derived units.
3. (Cancelled)
4. (Cancelled)

5. (Original) The nanocomposite of Claim 1, wherein the olefin is selected from one or more of isobutylene, isobutene, 2-methyl-1-butene, 3-methyl-1-butene, 2-methyl-2-butene, and 4-methyl-1-pentene, ethylene, propene, 1-butene, 1-hexene, and 1-octene.
6. (Cancelled )
7. (Cancelled)
8. (Original) The nanocomposite of Claim 1, wherein the elastomer also comprises isoolefin derived units and *p*-methylstyrene derived units.
9. (Cancelled)
10. (Original) The nanocomposite of Claim 1, wherein the functionalized units are present on the elastomer from 0.01 wt% to 15 wt% of the elastomer.
11. (Original) The nanocomposite of Claim 1, wherein the clay has been treated with an exfoliating agent to form an exfoliated clay.
12. (Cancelled)
13. (Original) The nanocomposite of Claim 1, wherein the clay is present from 0.1 wt% to 50 wt% of the nanocomposite.
- 14 - 15. (Cancelled)
16. (Original) The nanocomposite of Claim 1, also comprising a filler selected from carbon black, modified carbon black, silica, precipitated silica, and blends thereof.

- 17 - 18. (Cancelled)
19. (Original) The nanocomposite of Claim 1, also comprising a secondary rubber selected from natural rubber, polybutadiene rubber, nitrile rubber, silicon rubber, polyisoprene rubber, poly(styrene-*co*-butadiene) rubber, poly(isoprene-*co*-butadiene) rubber, styrene-isoprene-butadiene rubber, ethylene-propylene rubber, brominated butyl rubber, chlorinated butyl rubber, halogenated isoprene, halogenated isobutylene copolymers, polychloroprene, star-branched polyisobutylene rubber, star-branched brominated butyl rubber, poly(isobutylene-*co*-isoprene) rubber; halogenated poly(isobutylene-*co*-*p*-methylstyrene), ethylene-propylene rubber and mixtures thereof.
20. (Previously amended) An article comprising the nanocomposite of Claim 1, the article being a tire innerliner or an innertube.
21. (Cancelled)
22. (Currently amended) A method of forming an elastomeric nanocomposite comprising contacting:
- (a) an elastomer, wherein the elastomer comprises C<sub>2</sub> to C<sub>10</sub> olefin derived units, styrenic units in an amount of 1 to 15 wt% of the elastomer wherein some of the styrenic derived units are functionalized;
  - (b) at least one functionalizing compound selected from



wherein Q is selected from O and an NR<sup>1</sup> group, wherein R<sup>1</sup> is selected from hydrogen, C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls, substituted C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls; R<sup>2</sup> and R<sup>2'</sup> are the same or different and are selected from hydrogen, C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls, substituted C<sub>1</sub> to C<sub>20</sub> alkyls, alkenyls or aryls, hydroxyl and C<sub>1</sub> to C<sub>20</sub> alkoxys; and wherein R<sup>3</sup> and R<sup>4</sup> are the same or different and are selected from -OR<sup>5</sup> and -NHR<sup>5</sup>, wherein R<sup>5</sup> is defined as R<sup>1</sup> above ;

(c) at least one ~~free radical initiator~~ peroxide; and

(d) clay.

23. (Previously amended) The method of Claim 22, wherein the method of contacting is selected from one of the following methods: 1) the elastomer is first contacted with the functionalizing compound, followed by contacting with the clay, 2) the elastomer, clay, and functionalizing compound are contacted simultaneously, 3) the elastomer and functionalizing compound are solubilized in a diluent, and 4) the elastomer and the functionalizing compound are melt blended.

24 - 26. (Cancelled)

27. (Original) The method of Claim 22, wherein the ~~free radical initiator is a~~ at least one peroxide is selected from diacyl peroxides, ketone peroxides, peroxyesters, peroxydicarbonates, dialkyl peroxides, hydroperoxides, and peroxyketals.

28. (Cancelled)

29. (Original) The method of Claim 22, wherein the functionalizing compound is selected from monomethyl maleate, dimethyl maleate, diethyl maleate, diphenyl maleate, dibutyl fumarate, maleimide, citraconic anhydride, itaconic anhydride, maleic anhydride, N,N'-phenylenedimaleimide, N-methylmaleimide, N-phenylmaleimide, maleic acid, itaconic acid, and the metal carboxylic derivatives thereof.

30. (Original) The method of Claim 22, wherein the elastomer also comprises monomer units selected from styrenic derived units and substituted styrenic derived units.

31. (Cancelled)

32. (Original) The method of Claim 30, wherein the styrene derived units are present from 1 to 15 wt% of the elastomer.

33. (Cancelled)

34. (Original) The method of Claim 22, wherein the elastomer also comprises isoolefin derived units and *p*-methylstyrene derived units.

35. (Original) The method of Claim 22, wherein the elastomer is selected from natural rubber, poly(isobutylene-*co*-isoprene), polybutadiene,

poly(styrene-*co*-butadiene) rubber, poly(isoprene-*co*-butadiene), poly(styrene-isoprene-butadiene), star-branched polyisobutylene rubber, poly(isobutylene-*co*-styrene), poly(isobutylene-*co-p*-methylstyrene), ethylene-propylene rubber and mixtures thereof.

36. (Original) The method of Claim 22, wherein the elastomer is functionalized by contacting with the functionalizing compound, wherein the functional groups are present on the elastomer from 0.01 wt% to 15 wt% of the elastomer.
37. (Original) The method of Claim 22, wherein the clay has been treated with an exfoliating agent to form an exfoliated clay.
38. (Cancelled)
39. (Original) The method of Claim 22, wherein the clay is present from 0.1 wt% to 50 wt% of the nanocomposite.
40. - 41. (Cancelled)
42. (Original) The method of Claim 22, also comprising a filler selected from carbon black, modified carbon black, silica, precipitated silica, and blends thereof.
- 43 - 44. (Cancelled)
45. (Original) The method of Claim 22, also comprising a secondary rubber selected from natural rubber, polybutadiene rubber, nitrile rubber, silicon rubber, polyisoprene rubber, poly(styrene-*co*-butadiene) rubber, poly(isoprene-*co*-butadiene) rubber, styrene-isoprene-butadiene rubber, ethylene-propylene rubber, brominated butyl rubber, chlorinated butyl

rubber, halogenated isoprene, halogenated isobutylene copolymers, polychloroprene, star-branched polyisobutylene rubber, star-branched brominated butyl rubber, poly(isobutylene-*co*-isoprene) rubber; halogenated poly(isobutylene-*co-p*-methylstyrene) and mixtures thereof.

46 - 71. (Cancelled)

72. (New) A curable elastomeric nanocomposite comprising clay and an elastomer comprising isobutylene, wherein the elastomer also comprises functionalized monomer units having functional groups pendant to the elastomer, the functional groups being selected from the group consisting of dimethyl maleate, diethyl maleate, diphenyl maleate, dibutyl fumarate, citraconic anhydride, and itaconic anhydride.

73. (New) The nanocomposite of claim 72 wherein the elastomer comprises *p*-methylstyrene derived units.

74. (New) The nanocomposite of Claim 72, wherein the functionalized units are present on the elastomer from 0.01 wt% to 15 wt% of the elastomer.

75. (New) The nanocomposite of Claim 72, wherein the clay has been treated with an exfoliating agent to form an exfoliated clay.

76. (New) The nanocomposite of Claim 72, wherein the clay is present from 0.1 wt% to 50 wt% of the nanocomposite.